

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 15 June 2000 (15.06.00)	Applicant's or agent's file reference 118908.3 SZ
International application No. PCT/IL99/00562	Priority date (day/month/year) 26 October 1998 (26.10.98)
International filing date (day/month/year) 25 October 1999 (25.10.99)	
Applicant BOLOTINSKY, Yuri et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

15 May 2000 (15.05.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer C. Villet</p> <p>Telephone No.: (41-22) 338.83.38</p>
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PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

REINHOLD COHN AND PARTNERS
P.O. Box 4060
61040 Tel-Aviv
ISRAEL

RECEIVED
26-02-2001
REINHOLD COHN AND PARTNERS

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year) 22.02.2001

Applicant's or agent's file reference
118908.3.SZ 1.5

IMPORTANT NOTIFICATION

International application No.
PCT/IL99/00562

International filing date (day/month/year)
25/10/1999

Priority date (day/month/year)
26/10/1998

Applicant
A.T.T. ADVANCED TRANSFORMER TECHNOLOGIES..et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.


4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office
D-80298 Munich
Tel. +49 89 2399-0 Tlx 523656 epmu d
Fax +49 89 2399-4485

Authorized officer

Schuster-Kaechele, W

Tel. +49 89 2399-2281



Form PCT/IPEA/416 (July 1992)

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REINHOLD COHN & PARTN

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 118908.3 SZ		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/418)	
International application No. PCT/IL99/00562	International filing date (day/month/year) 25/10/1999	Priority date (day/month/year) 26/10/1998	
International Patent Classification (IPC) or national classification and IPC H01F27/25			
Applicant A.T.T. ADVANCED TRANSFORMER TECHNOLOGIES..et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 9 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 4 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input checked="" type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application 			
Date of submission of the demand 15/05/2000		Date of completion of this report 22.02.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx 523656 epmu d Fax +49 89 2399 - 4465		Authorized officer Meyer, J Telephone No. +49 89 2399 2728 	

Form PCT/PEA/408 (cover sheet) (January 1994)

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REINHOLD COHN & PARR

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IL99/00562

I. Basis of the report.

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*

Description, pages:

1-24 as originally filed

Claims, No.:

1-28 as received on 30/01/2001 with letter of 30/01/2001

Drawings, sheets:

1/8-8/8 as originally filed

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the International application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IL99/00562**

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):
(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
☒ claims Nos. 20-28.

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☐ the description, claims or drawings (*Indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for the said claims Nos. 20-28.
2. A meaningful international preliminary examination report cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:
- ☐ the written form has not been furnished or does not comply with the standard.
- ☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims 5,10,12-14,17-19

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IL99/00562

	No: Claims 1-4,6-9,11,15,16
Inventive step (IS)	Yes: Claims
	No: Claims 1-19
Industrial applicability (IA)	Yes: Claims 1-19
	No: Claims

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL99/00562

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. Present Claim 20 includes features, which have not been present in original Claim 20 (cf. the underlined passages in present Claim 20, in particular the annealing of the toroids process steps). Present Claims 21 to 27 depend on present Claim 20. Present independent product Claim 28 defines a product by a process according to present Claim 20. Therefore, the subject-matter of present Claims 20 to 28 has not been searched, and the International Search Report has not been established with respect to present Claims 20 to 28 (cf. Rules 66.1(e); 70.2(d) PCT).
2. Furthermore, the process features of present Claim 20 defining the product of present Claim 28 are not necessarily distinguishable from the product (lack of clarity; cf. Article 6 PCT).
3. This report includes a reasoned statement as defined in Item V below with respect to original Claims 20 to 36.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following document/s/

D1: EP-A-0 151 048 (HAWKER SIDDELEY POWER TRANSFOR) 7 August 1985 (1985-08-07)
D2: US-A-2 909 742 (GENERAL ELECTRIC COMPANY) 20 October 1959 (1959-10-20)
D3: GB-A-1 164 288 (MINISTERUL INDUSTREI CONSTRUCTIILOR DE MASINI) 17 September 1969 (1969-09-17)
D4: US-A-2 702 887 (MC GRAW ELECTRIC COMPANY) 22 February

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL99/00562

1955 (1955-02-22).

D5: FR-A-1 401 396 (LIGNES TÉLÉGRAPHIQUES ET
TÉLÉPHONIQUES) 8 October 1965 (1965-10-08)

D6: GB 830 094 A (BROWN BOVERI) 9 March 1960 (1960-03-09)

D7: CH 483 707 A (BROWN BOVERI) 31 December 1969 (1969-12-31)

D8: US-A-3 684 991 (TRUMP JOHN GEORGE ET AL) 15 August 1972
(1972-08-15)

D9: PATENT ABSTRACTS OF JAPAN vol. 016, no. 513 (E-1283), 22
October 1992 (1992-10-22) & JP 04 192510 A (TOSHIBA CORP), 10
July 1992 (1992-07-10)

D10: PATENT ABSTRACTS OF JAPAN vol. 006, no. 211 (E-137),
23 October 1982 (1982-10-23) & JP 57 114215 A (TOKUDEN KK), 16
July 1982 (1982-07-16)

D11: PATENT ABSTRACTS OF JAPAN vol. 008, no. 221 (E-271),
9 October 1984 (1984-10-09) & JP 59 104110 A (TOKUDEN KK), 15
June 1984 (1984-06-15)

2. Novelty (Article 33 (2) PCT)

2.1 D1 discloses (cf. the whole document, in particular page 5, line 13 to
page 8, line 25) the subject-matter of present Claims 1 (three legs 2 to
4; yokes 5, 9; windings 6 to 8; symmetry about central axis 12;), 2 (strip
10; page 5, line 32 to page 6, line 4: amorphous ferromagnetic material,
e. g. "METGLAS"; page 6, lines 28 - 31), 4 (cf. Figure 2), 9 (cf. Figures
1 to 6 and the related text), 16 (cf. Figures 1 to 6 and the related text).

2.2 D2 discloses (cf. the whole document, in particular column 1, line 63 to
column 2, line 60) the subject-matter of present Claims 1 (cf. the Figure),
3 (cf. column 1, line 64), 6 to 8 (insulation 30 and the Figure; cf. also
point VIII. below concerning the term "toroid"), 11 (cf. insulating material
31; column 2, lines 39 - 46), 15 (cf. the Figure and the related text;
column 2, lines 47 - 60).

2.3 None of the available documents discloses, in combination, all features

of present Claims 5, 10, 12 to 14, 17 to 19.

3. Inventive Step (Article 33 (3) PCT)

3.1 D1 discloses silicon steel as material of the core including top and bottom yokes (cf. page 1, lines 12 - 23). Use of silicon steel for the yokes of D1 is obvious (cf. present Claim 3). D6 mentions a substantially circular yoke alternatively to a triangular yoke (cf. page 2, lines 4 - 12; a combination with the transformer of D1 is obvious; cf. also D7, Figure 3; cf. present Claim 5). Analogous use of the slots of D1 (cf. Figure 3; page 5, lines 24 - 30) is obvious (cf. present Claim 13). Coating contacting surfaces with insulating material 31 is obvious from D2 (cf. column 2, lines 39 - 46; cf. present Claim 14).

3.2 D2 teaches to form the yokes 10, 11 and the leg members 12, 13, 14 separately, to mount the coils 21, 22 over the legs, and mounting the column-like elementary circuits between the yokes 10, 11 in a spaced-apart relationship. From D1, it is obvious to form a spatial symmetrical structure about a central axis 12. Therefore, from an obvious combination of D1 and D2, the skilled person achieves the subject-matter of original Claims 20, 21 (cf. D2, column 1, lines 43 - 68), 22 (cf. D1, page 5, line 31 to page 6, line 4), 23 (cf. D2, column 1, line 64), 24 (D2 teaches to use a form of the desired diameter (cf. column 1, lines 62 - 64); D4, column 2, lines 21 - 32 and 39 - 48 teaches to use a triangularly shaped mandrel and to anneal while clamped; it is obvious to the skilled person to use a triangularly shaped mandrel to form and fix the yokes of D1), 25 (well-known to the skilled person; cf. D5, Figures 1, 2 and the related text), 26 (well-known to the skilled person; cf. D6, page 1, lines 57 - 59; cf. also D2, column 2, line 25), 29 and 30 (cf. D2, column 2, lines 14 - 60), 31 (cf. the legs of D1), 32 (cf. D2, column 2, lines 14 - 27), 33 (cf. D2, column 1, line 42: magnetic material; D1, page 7, last line to page 8, line 5), 34 (cf. D2, column 1, line 64; column 2, lines 18 - 23).

3.3 Use of strips of different widths for power transformers is suggested by

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL99/00562

D3. From an obvious combination of D3 with D1 and/or D2, the skilled person achieves the subject-matter of present Claims 10, 27, 28, 35, 36.

3.4

D10 teaches to use magnetic liquid of carbonyl iron powder and thermosetting resin to make gaps at the confronting parts to a minimum. Therefore, it is obvious to use such magnetic liquid in a transformer obvious from D2 (cf. present Claims 12 and 17 to 19). D9 teaches to use sintered magnetic powder (cf. present Claims 11, 12, 17, 18).

Re Item VII

Certain defects in the international application

1. The features of the claim/s are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
2. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document/s D1 to D11 is not mentioned in the description, nor is/are this/these document/s identified therein.
3. The units employed on page/s 2, lines 15 and 16, are not additionally expressed in terms of the units stipulated by Rule 10 PCT.

Re Item VIII

Certain observations on the international application

The original version of claims does not meet the requirements of Article 6 PCT (The present Claims 1 to 19 are identical with original Claims 1 to 19.).

1. In Claims 6, 10, 21, 29, 30, 32 (and throughout the description; cf. e. g. page 10, line 1), the term "toroid" is not clear (cf. present Figure 7 and the Figure of D2). Normally, the surface of a torus is formed by rotating

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL99/00562

a circle through 360° about an axis that does not cut the circle.

2. In Claim 11, it is not clear what circuits are spaced from one another (stacked members of one column-like elementary circuit? cf. the Figure of D2).

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference 118908.3 SZ	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IL99/00562	International filing date (day/month/year) 25/10/1999	Priority date (day/month/year) 26/10/1998
International Patent Classification (IPC) or national classification and IPC H01F27/25		
Applicant A.T.T. ADVANCED TRANSFORMER TECHNOLOGIES..et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 9 sheets, including this cover sheet.
<input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
These annexes consist of a total of 4 sheets.
3. This report contains indications relating to the following items:
<ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input checked="" type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application

Date of submission of the demand 15/05/2000	Date of completion of this report 22.02.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Meyer, J Telephone No. +49 89 2399 2728



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IL99/00562**

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*:

Description, pages:

1-24 as originally filed

Claims, No.:

1-28 as received on 30/01/2001 with letter of 30/01/2001

Drawings, sheets:

1/8-8/8 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IL99/00562**

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 20-28.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 20-28.

2. A meaningful international preliminary examination report cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims 5,10,12-14,17-19

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL99/00562

	No:	Claims	1-4,6-9,11,15,16
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-19
Industrial applicability (IA)	Yes:	Claims	1-19
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. Present Claim 20 includes features, which have not been present in original Claim 20 (cf. the underlined passages in present Claim 20, in particular the annealing of the toroids process steps). Present Claims 21 to 27 depend on present Claim 20. Present independent product Claim 28 defines a product by a process according to present Claim 20. Therefore, the subject-matter of present Claims 20 to 28 has not been searched, and the International Search Report has not been established with respect to present Claims 20 to 28 (cf. Rules 66.1(e), 70.2(d) PCT).
2. Furthermore, the process features of present Claim 20 defining the product of present Claim 28 are not necessarily distinguishable from the product (lack of clarity; cf. Article 6 PCT).
3. This report includes a reasoned statement as defined in Item V below with respect to original Claims 20 to 36.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following document/s/:

D1: EP-A-0 151 048 (HAWKER SIDDELEY POWER TRANSFOR) 7 August 1985 (1985-08-07)
D2: US-A-2 909 742 (GENERAL ELECTRIC COMPANY) 20 October 1959 (1959-10-20)
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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL99/00562

1955 (1955-02-22)

D5: FR-A-1 401 396 (LIGNES TÉLÉGRAPHIQUES ET
TÉLÉPHONIQUES) 8 October 1965 (1965-10-08)

D6: GB 830 094 A (BROWN BOVERI) 9 March 1960 (1960-03-09)

D7: CH 483 707 A (BROWN BOVERI) 31 December 1969 (1969-12-31)

D8: US-A-3 684 991 (TRUMP JOHN GEORGE ET AL) 15 August 1972
(1972-08-15)

D9: PATENT ABSTRACTS OF JAPAN vol. 016, no. 513 (E-1283), 22
October 1992 (1992-10-22) & JP 04 192510 A (TOSHIBA CORP), 10
July 1992 (1992-07-10)

D10: PATENT ABSTRACTS OF JAPAN vol. 006, no. 211 (E-137),
23 October 1982 (1982-10-23) & JP 57 114215 A (TOKUDEN KK), 16
July 1982 (1982-07-16)

D11: PATENT ABSTRACTS OF JAPAN vol. 008, no. 221 (E-271),
9 October 1984 (1984-10-09) & JP 59 104110 A (TOKUDEN KK), 15
June 1984 (1984-06-15)

2. Novelty (Article 33 (2) PCT)

2.1 D1 discloses (cf. the whole document, in particular page 5, line 13 to
page 8, line 25) the subject-matter of present Claims 1 (three legs 2 to
4; yokes 5, 9; windings 6 to 8; symmetry about central axis 12;), 2 (strip
10; page 5, line 32 to page 6, line 4: amorphous ferromagnetic material,
e. g. "METGLAS"; page 6, lines 28 - 31), 4 (cf. Figure 2), 9 (cf. Figures
1 to 6 and the related text), 16 (cf. Figures 1 to 6 and the related text).

2.2 D2 discloses (cf. the whole document, in particular column 1, line 63 to
column 2, line 60) the subject-matter of present Claims 1 (cf. the Figure),
3 (cf. column 1, line 64), 6 to 8 (insulation 30 and the Figure; cf. also
point VIII. below concerning the term "toroid"), 11 (cf. insulating material
31; column 2, lines 39 - 46), 15 (cf. the Figure and the related text;
column 2, lines 47 - 60).

2.3 None of the available documents discloses, in combination, all features

of present Claims 5, 10, 12 to 14, 17 to 19.

3. Inventive Step (Article 33 (3) PCT)

3.1 D1 discloses silicon steel as material of the core including top and bottom yokes (cf. page 1, lines 12 - 23). Use of silicon steel for the yokes of D1 is obvious (cf. present Claim 3). D6 mentions a substantially circular yoke alternatively to a triangular yoke (cf. page 2, lines 4 - 12; a combination with the transformer of D1 is obvious; cf. also D7, Figure 3; cf. present Claim 5). Analogous use of the slots of D1 (cf. Figure 3; page 5, lines 24 - 30) is obvious (cf. present Claim 13). Coating contacting surfaces with insulating material 31 is obvious from D2 (cf. column 2, lines 39 - 46; cf. present Claim 14).

3.2 D2 teaches to form the yokes 10, 11 and the leg members 12, 13, 14 separately, to mount the coils 21, 22 over the legs, and mounting the column-like elementary circuits between the yokes 10, 11 in a spaced-apart relationship. From D1, it is obvious to form a spatial symmetrical structure about a central axis 12. Therefore, from an obvious combination of D1 and D2, the skilled person achieves the subject-matter of original Claims 20, 21 (cf. D2, column 1, lines 43 - 68), 22 (cf. D1, page 5, line 31 to page 6, line 4), 23 (cf. D2, column 1, line 64), 24 (D2 teaches to use a form of the desired diameter (cf. column 1, lines 62 - 64); D4, column 2, lines 21 - 32 and 39 - 48 teaches to use a triangularly shaped mandrel and to anneal while clamped; it is obvious to the skilled person to use a triangularly shaped mandrel to form and fix the yokes of D1), 25 (well-known to the skilled person; cf. D5, Figures 1, 2 and the related text), 26 (well-known to the skilled person; cf. D6, page 1, lines 57 - 59; cf. also D2, column 2, line 25), 29 and 30 (cf. D2, column 2, lines 14 - 60), 31 (cf. the legs of D1), 32 (cf. D2, column 2, lines 14 - 27), 33 (cf. D2, column 1, line 42: magnetic material; D1, page 7, last line to page 8, line 5), 34 (cf. D2, column 1, line 64; column 2, lines 18 - 23).

3.3 Use of strips of different widths for power transformers is suggested by

D3. From an obvious combination of D3 with D1 and/or D2, the skilled person achieves the subject-matter of present Claims 10, 27, 28, 35, 36.

- 3.4 D10 teaches to use magnetic liquid of carbonyl iron powder and thermosetting resin to make gaps at the confronting parts to a minimum. Therefore, it is obvious to use such magnetic liquid in a transformer obvious from D2 (cf. present Claims 12 and 17 to 19). D9 teaches to use sintered magnetic powder (cf. present Claims 11, 12, 17, 18).

Re Item VII

Certain defects in the international application

1. The features of the claim/s are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
2. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document/s D1 to D11 is not mentioned in the description, nor is/are this/these document/s identified therein.
3. The units employed on page/s 2, lines 15 and 16, are not additionally expressed in terms of the units stipulated by Rule 10 PCT.

Re Item VIII

Certain observations on the international application

The original version of claims does not meet the requirements of Article 6 PCT (The present Claims 1 to 19 are identical with original Claims 1 to 19.).

1. In Claims 6, 10, 21, 29, 30, 32 (and throughout the description; cf. e. g. page 10, line 1), the term "toroid" is not clear (cf. present Figure 7 and the Figure of D2). Normally, the surface of a torus is formed by rotating

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL99/00562

a circle through 360° about an axis that does not cut the circle.

2. In Claim 11, it is not clear what circuits are spaced from one another (stacked members of one column-like elementary circuit? cf. the Figure of D2).

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 118908.3 SZ	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IL 99/ 00562	International filing date (day/month/year) 25/10/1999	(Earliest) Priority Date (day/month/year) 26/10/1998
Applicant A.T.T. ADVANCED TRANSFORMER TECHNOLOGIES..et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of Invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1
☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PC 99/00562

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01F27/25 H01F30/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 151 048 A (HAWKER SIDDELEY POWER TRANSFOR) 7 August 1985 (1985-08-07) page 5, line 13 -page 8, line 25	1-4, 9, 13
A	---	20-23, 31
X	US 2 909 742 A (GENERAL ELECTRIC COMPANY) 20 October 1959 (1959-10-20) column 1, line 63 -column 2, line 60	1, 3, 6-8, 11, 15
A	---	20, 29, 30, 32, 34
A	GB 1 164 288 A (MINISTERUL INDUSTREI CONSTRUCTIILOR DE MASINI) 17 September 1969 (1969-09-17) page 1, line 44 - line 62	10, 35, 36

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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

13 January 2000

Date of mailing of the international search report

21/01/2000

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INTERNATIONAL SEARCH REPORT

International Application No

PCT 99/00562

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 016, no. 513 (E-1283), 22 October 1992 (1992-10-22) & JP 04 192510 A (TOSHIBA CORP), 10 July 1992 (1992-07-10) abstract ---	11, 12, 17, 18
A	PATENT ABSTRACTS OF JAPAN vol. 006, no. 211 (E-137), 23 October 1982 (1982-10-23) & JP 57 114215 A (TOKUDEN KK), 16 July 1982 (1982-07-16) abstract ---	17
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A	FR 1 401 396 A (LIGNES TÉLÉGRAPHIQUES ET TÉLÉPHONIQUES) 8 October 1965 (1965-10-08) figures 1, 2 ---	25
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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